WHAT IS CLAIMED IS:

1. An image processing method for generating a gray level rendered pixel value comprising the steps of :

providing a digitized image that has a plurality of pixels with each of the pixels being rendered into a halftoned microdot having a density, the microdot existing within one of a plurality of halftoning planes, wherein the halftoning planes are indicative of an intensity value for the pixels;

forming a plurality of tiles from the microdots in accordance with a screen angle and a line ruling from a halftone screen used to converted the pixels into the microdots, wherein each of the tiles comprises a repetitive sequence of microdots;

associating each of the microdots within the tiles by a coordinate position as well as the density value;

storing the tiles into a buffer having a length and a width; and

placing into the buffer an offset determined by the tile geometry, wherein the offset acts as a pointer to read data out offset by a predetermined amount in order to generate the repetitive sequence of microdots; and

reading the buffer to retrieve stored image data comprising density value.

2. The image processing method of claim 1 wherein the density value for a pixel is a stored value that characterizes the value of the microdots in the halftone plane.

3. The image processing method of claim 2 wherein an average density value for the tile characterizes the tile to the halftoning plane.

4. The image processing method of claim 2 wherein the density value is a stored value within the buffer, the density value being an output from the halftone plane.

5. The image processing method of claim 4 wherein the halftone plane is an input halftone plane that functions as an address to the buffer, the buffer data addressed being the density value that is an output halftone plane that is represented by a different number of bits than the input halftone plane.

6. The image processing method of claim 4 wherein the halftone plane is an input halftone plane that functions as an address to the buffer, the buffer data addressed being the density value that is an output halftone plane that is represented by the same number of bits as the input halftone plane.

7. The image processing method of claim 2 wherein the buffer is a lookup table that stores halftone rendering values in accordance with a mixed dot growth pattern.

8. The image processing method of claim 7 wherein the buffer further comprises a second lookup table and in the lookup table there is stored halftone rendering values in accordance with a partial dot growth pattern.

9. The image processing method of claim 1 wherein the coordinate value I is determined according to a calculation wherein I = (X+ Y*Bs)%Bw, wherein X,Y represent an image pixel address, Bs represents the offset value used for establishing a start location for alternate repeats of the sequences of pixels, Bw represents a sequence width, and % identifies a calculation process wherein a division operation is provided and the remainder of the division operation is retained as the coordinate value.

10. The image processing method of claim 1 wherein the coordinate value I is determined according to a calculation wherein I = (X+ Y*Bs)%Bw, wherein X,Y represent an image pixel address, Bs represents a brick offset value used for establishing a start location for alternate repeats of a series or brick of rendering values for a predetermined gray level, Bw represents a brick width, and % identifies a calculation process wherein a division operation is provided and the remainder of the division operation is retained as the coordinate value.

11. The image processing method of claim 1 wherein the coordinate value I is determined according to a calculation wherein I = (X+ (Y/Bh)*Bs)%Bw, wherein X,Y represent an image pixel address, Bs represents a brick offset value used for establishing a start location for alternate repeats of a series or brick of rendering values for a predetermined gray level, Bw represents a brick width, Bh represents a brick height representing different subsets of a series of rendering numbers for a predetermined gray level, and % identifies a

calculation process wherein a division operation is provided and the remainder of the division operation is retained as the coordinate value.

12. The image processing method of claim 9 wherein a coordinate value J is determined according to a calculation where in J=Y%Bh.

13. The image processing method of claim 1 further comprising the step of blending rendered values from the halftoning processes via at least one additional halftoning processes.

14. The image processing method of claim 13 further comprising the step of edge enhancement processing.

15. An image processing system for generating gray level pixel values comprising:

a lookup table storing gray level pixel values representing rendered values of a halftoning process into one of a plurality of halftoning planes; and

an input to the lookup table providing a coordinate value of a current pixel to be rendered and a gray level of the pixel to be rendered.

16. The image processing system of claim 15 wherein the coordinate value I is determined according to a calculation wherein I = (X+ Y*Bs)%Bw, wherein X,Y represent an image pixel address, Bs represents a brick offset value used for establishing a start location for alternate repeats of a series or brick of rendering values for a predetermined gray level, Bw represents a brick width, and % identifies a calculation process wherein a division operation is provided and the remainder of the division operation is retained.

17. The image processing system of claim 15 wherein the lookup table stores gray level values rendered from a digitized image that has a plurality of pixels with each of the pixels being converted into a halftoned microdot that exists within one of the plurality of halftoning planes; wherein the microdots within the halftoning planes are indicative an density value of the pixels rendered.

18. The image processing system of claim 17 wherein the lookup table stores a plurality of tiles from the microdots in accordance with a screen angle and a line ruling from a halftone screen used to converted the pixels into the microdots, wherein each of the tiles comprises a repetitive sequence of microdots;

19. The image processing system of claim 18 wherein each of the microdots within the tiles is associated by a coordinate position, a density value as well as the plane value;

20. The image processing system of claim 19 wherein the tiles stored within the lookup table buffer have a length and a width.

21. The image processing system of claim 20 wherein the lookup table also store an offset determined by the tile geometry stored therein, wherein the offset acts as a pointer to read data out offset by a predetermined amount in order to generate the repetitive sequence of microdots.